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EXAMINER

YODER III, CHRISS S

ART UNIT

PAPER NUMBER

2622

NOTIFICATION DATE

DELIVERY MODE

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ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary

Application No.

09/654,263

Applicant(s)

HYODO ET AL.

Examiner

Chriss S. Yoder, III

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 August 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,5,6,8-13,15-17 and 31-58 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 50-58 is/are allowed.
- 6) ☒ Claim(s) 1,2,5,6,8-13,15-17 and 31-49 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 September 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

Applicant's arguments filed August 7, 2007 have been fully considered but they are not persuasive.

1. Applicant argues, with respect to claims 1 and 31, that McCarthy does not teach or suggest "an imaging device which images a subject with an exposure value that is lower than a normal exposure value for a desired reproducing so as to acquire image data with an acquiring imaging luminance range wider than a reproducing luminance range on at least one of displaying and printing".

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

2. Applicant also argues, with respect to claims 1 and 31, that Tsai neither teaches nor suggests an imaging device which images a subject with an exposure value that is lower than a normal exposure value for a desired reproducing so as to acquire image data with an acquiring imaging luminance range wider than a reproducing luminance range on at least one of displaying and printing".

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208

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USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

3. Applicant also argues, with respect to claims 1 and 31, that there is also no reason or motivation to combine McCarthy and Tsai, because these references are responsive to different problems and thus it is respectfully submitted that the combination of these references to produce present claimed invention would not be obvious, and that the combination provides no common problem recognition with the present claimed invention.

In response to applicant's argument that McCarthy and Tsai are responsive to different problems and thus the combination of these references to produce present claimed invention would not be obvious, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

4. Applicant also argues, with respect to claims 1 and 31, that even if there was a motivation to combine these two references, the combination of the method of McCarthy and the method of Tsai would yield a method for reconstructing extended color gamut digital image using stored color adjustment function and replacing pixels of an image that are underexposed or overexposed, and that the combination of McCarthy and Tsai neither discloses nor suggests "an imaging device which images a subject with an

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exposure value that is lower than a normal exposure value for a desired reproducing so as to acquire image data with an acquiring imaging luminance range wider than a reproducing luminance range on at least one of displaying and printing”.

The Examiner notes, that Tsai was not relied upon to teach the replacement of pixels of an image that are underexposed or overexposed, but rather, that it is well known in the art to vary the exposure level of a captured image in order to adjust the dynamic range of an image. In this instance, McCarthy is relied upon to disclose the use of the use of an imaging device which images a subject so as to acquire image data with an acquiring imaging luminance range wider than a reproducing luminance range on at least one of displaying and printing (column 2, lines 28-33 and column 4, lines 9-35). McCarthy is silent as to *how* the image is captured with a wide luminance range. And Tsai is relied upon to teach that by varying the exposure value of a captured image, the dynamic range of the image can be adjusted (column 1, lines 29-46 and column 3, lines 19-26). Therefore, through the combination of McCarthy in view of Tsai, by lowering the exposure values of the image (with respect to the normal value), as taught by Tsai, in order to provide a wide dynamic range image, then the wide luminance range image captured by McCarthy is considered to be imaged with an exposure value that is lower than a normal exposure value for a desired reproducing so as to acquire image data with an acquiring imaging luminance range wider than a reproducing luminance range.

5. Applicant also argues, with respect to claim 31, that contrary to the assertion by the Examiner, the cited passage of McCarthy (column 8, lines 46-53) merely describes some examples of using the reconstructed extended color gamut digital images, and

unlike the present invention, McCarthy is concerned with storing information describing color adjustment function and the limited color gamut digital image. And nowhere in McCarthy is there mention or suggestion of "a reading device which reads the first image data with the acquiring luminance range and reads the luminance range information".

However, the Examiner notes, that the limited color gamut image is considered to be the "first imaged data with an acquiring luminance range", and the information describing the color adjustment function is considered to be the "luminance range information" (column 6, line 37 – column 7, line 9). And that in order to reconstruct the extended color gamut images, the limited color gamut image and the luminance range information are read (column 8, lines 31-45).

6. Applicant argues, with respect to claim 32, that the Office Action rightly stated that McCarthy fails to disclose the recording of an information indicating maximum reflectance set in the camera. However, the Office Action simply took official notice that the concept of recording of an information indicating maximum reflectance set in the camera is notoriously well known. Applicants traverse the official notice, and respectfully request that a proper prior art be cited to support this notion. Applicants respectfully request that the Examiner provide support for the assertion and explain how it may be combined with McCarthy and Tsai.

Regarding Examiner's use of Official Notice, Applicant's attempted traversal is inadequate. "To adequately traverse such a finding, an applicant must specifically point out the supposed errors in the examiner's action, which would include stating why the

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noticed fact is not considered to be common knowledge or well-known in the art.” See MPEP §2144.03. Because the Applicant has not specifically pointed out the supposed errors in the Examiner's action, including stating why the noticed fact is not considered to be common knowledge or well-known in the art, the Examiner finds the traversal to be inadequate.

However, as evidentiary support, the Examiner provides the “Digital Still Camera Image File Format Standard” (version 2.1). “Digital Still Camera Image File format Standard” (version 2.1) discloses recording an image tag that includes information indicating maximum reflectance set in the camera (page 46, the image tag “BrightnessValue” stores the maximum reflectance value of the captured image).

7. Applicant argues, with respect to claims 48-49, that the official notice taken by the Examiner does not remedy the deficiencies of McCarthy. Specifically, the combination of McCarthy and the use of image tags/meta-data to store exposure values still does not teach or suggest the features of “wherein the recording device records information specifying the exposure value used to image the subject, and wherein the signal processing device produces the second image data also based on the exposure value” and “wherein the gradation conversion function used by the imaging device is based on the exposure value used to subject the image”. Applicants also traverse the official notice, and respectfully request that a proper prior art be cited to support the Examiner's allegation that the concept of using image tags/meta-data to store exposure values is notoriously well known and properly demonstrate that the teaching of the prior art.

As support for the use of image tags/meta-data to store exposure values, the Examiner provides the "Digital Still Camera Image File Format Standard" (version 2.1). "Digital Still Camera Image File format Standard" (version 2.1) discloses recording an image tag that includes information specifying the exposure value used to image the subject (page 53, the image tag "ExposureIndex" stores the exposure value of the captured image). Additionally, the Examiner notes, that McCarthy discloses the use of the use of image tags/meta-data to store the conversion functions (column 7, lines 57-63: the adjustment function is considered to be the gradation conversion function), as well as the use of exposure to correct the image data (column 8, lines 54-62). Taking into account that the image conversion functions are based on the exposure, by modifying the McCarthy device to store the exposure value of the captured image as an image tag/meta-data, it is considered that the adjustment functions are associated with the exposure value. And therefore, the second image data is considered to be produced using the adjustment functions based on the exposure value.

8. Applicant's arguments with respect to claims 37-38, and 43-44 have been considered but are moot in view of the new ground(s) of rejection. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action.

9. Applicant's arguments, see pages 24-26, filed August 7, 2007, with respect to claim 50 have been fully considered and are persuasive. The rejection of claims 50-58 have been withdrawn.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 1-2, 31-33, 39-42, and 47-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over McCarthy et al. (US Patent # 6,335,983) in view of Tsai (US Patent # 5,309,243).

11. In regard to **claim 1**, note McCarthy discloses the use of the use of an imaging device which images a subject so as to acquire image data with an acquiring imaging luminance range wider than a reproducing luminance range on at least one of displaying and printing (column 2, lines 28-33 and column 4, lines 9-35) and a recording device which records an information indicating that the acquired image data is imaged with the acquiring imaging luminance range that is wider than the reproducing luminance range along with the image data acquired by the imaging device (column 6, line 64 - column 7, line 9).

Therefore, it can be seen that McCarthy fails to disclose that the subject is imaged with an exposure value that is lower than a normal exposure value for a desired reproducing. Tsai discloses the use of an imaging device that images a subject with

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lower than normal exposure values (column 2, lines 30-36). Tsai teaches that the adjustment of the image exposure values is preferred in order to compensate the image for better quality. Therefore, it would have been obvious to one of ordinary skill in the art to modify the primary device to image the subject with a lower than normal exposure value as suggested by Tsai.

12. In regard to **claim 2**, note McCarthy discloses that the acquiring imaging luminance range is at least two and at most six times as wide as the reproducing luminance range (column 2, lines 28-33, depending on the application, the luminance range varies with each device).

13. In regard to **claim 31**, note McCarthy disclose the use of an electronic image recording and reproducing system, comprising an imaging device which images a subject so as to acquire first imaged data with an acquiring luminance range wider than a reproducing luminance range on at least one of displaying and printing (column 2, lines 28-33 and column 4, lines 9-35), a recording device which records the first imaged data acquired by the imaging device and luminance range information indicating that the acquiring luminance range is wider than the reproducing luminance range (column 6, line 64 - column 7, line 9), a reading device which reads the first image data with the acquiring luminance range and reads the luminance range information (column 8, lines 46-53), a signal processing device which produces, from the first image data with the recording luminance range, second image data with a luminance range required for reproducing according to the luminance range information (column 8, lines 46-53), and a reproducing device comprising at least one of a displaying device which displays the

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second image data as a visible image and a printer which prints the second image data as the visible image (column 8, lines 46-53).

Therefore, it can be seen that McCarthy fails to disclose that the subject is imaged with an exposure value that is lower than a normal exposure value for a desired reproducing. Tsai discloses the use of an imaging device that images a subject with lower than normal exposure values (column 2, lines 30-36). Tsai teaches that the adjustment of the image exposure values is preferred in order to compensate the image for better quality. Therefore, it would have been obvious to one of ordinary skill in the art to modify the primary device to image the subject with a lower than normal exposure value as suggested by Tsai.

14. In regard to **claim 32**, note the primary reference of McCarthy in view of Tsai discloses an imaging device which images a subject so as to acquire image data with an acquiring imaging luminance range wider than a reproducing luminance range on at least one of displaying and printing, as recited in claim 1 above. Therefore, it can be seen that the primary device fails to record an information indicating maximum reflectance set in the camera. However, McCarthy does disclose the use of file formats that support the storage of additional information through the use of tags or meta-data. Official Notice is taken that the concepts and advantages of the storage of information indicating the maximum reflectance are notoriously well known and expected in the art. Therefore, it would have been obvious to one of ordinary skill in the art to modify the primary device to include the storage of information indicating the maximum reflectance

in order to provide detailed information about the captured image to a processing device so that proper image editing can be performed.

15. In regard to **claim 33**, note McCarthy discloses that the recording device converts the image data acquired by the imaging device with a predetermined function and records the converted image data and information on the predetermined function (column 7, lines 1-10).

16. In regard to **claim 39**, note McCarthy discloses that the recording device records the information indicating that the acquired image data is imaged with the acquiring imaging luminance range that is wider than the reproducing luminance range separately from the image data (column 7, lines 57-63).

17. In regard to **claim 40**, note McCarthy discloses that the recording device records the information indicating that the acquired image data is imaged with the acquiring imaging luminance range that is wider than the reproducing luminance range in a same file as the image data (column 7, lines 57-63).

18. In regard to **claim 41**, note McCarthy discloses that the recording device records the luminance range information separately from the second image data (column 7, lines 57-63).

19. In regard to **claim 42**, note McCarthy discloses that the recording device records the luminance range information in the same file as the second image data (column 7, lines 57-63).

20. In regard to **claim 47**, note McCarthy discloses that the imaging device acquires the first image data by converting initially imaged data with a gradation conversion

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function (column 7, lines 22-29), wherein the recording device records information specifying the gradation conversion function along with the second image data (column 7, lines 47-60), and wherein the signal processing device produces the second image data also based on the recorded gradation conversion function (column 8, lines 46-60).

21. In regard to **claims 48-49**, note the primary reference of McCarthy in view of Tsai discloses the use of an electronic image recording and reproducing system as recited in claim 47 above. Therefore, it can be seen that the primary reference fails to disclose that the recording device records information specifying the exposure value used to image the subject, that wherein the signal processing device produces the second image data also based on the exposure value, and that the gradation conversion function used by the imaging device is based on the exposure value used to subject the image. However, McCarthy does disclose the use of image tags/meta-data to store the conversion functions (column 7, lines 57-63) as well as the use of exposure to correct the image data (column 8, lines 54-62). Official Notice is taken that the concepts and advantages of using image tags/meta-data to store exposure values are notoriously well known and expected in the art. Therefore, it would have been obvious to modify the primary device to include the storage of exposure value within the image tags/meta-data in order to provide image capture parameters along with the image for future image processing.

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22. Claims 5, 8, 10, 11 and 34-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over McCarthy et al. (US Patent # 6,335,983) in view of Tsai (US Patent # 5,309,243), and further in view of Kim (US Patent # 5,710,594).

23. In regard to **claim 10**, note McCarthy discloses the that the recording device records information that represents a relationship between the image data and digital values of the converted image data to be recorded the predetermined function and records at least a first coefficient of the function (column 7, lines 30-36). Therefore, it can be seen that the primary reference of McCarthy in view of Tsai fails to disclose the use of a recording device that represents a relationship between the image data and a digital value to be recorded while dividing the relationship into an area where the relationship is represented by a logarithmic function and an area where the relationship is represented by a linear function, and records a coefficient of the logarithmic function and a coefficient of the linear function with the image data. Kim discloses the use of a relationship having an area that is represented by a logarithmic function and an area that is represented by a linear function (column 1, lines 53-57 and column 6, lines 19-21, both the linear and logarithmic functions are used; and using the function of Kim, the gamma correction coefficient that is stored in McCarthy is considered to be the equivalent of the coefficients used in the correction function of Kim). Kim teaches that the use of both linear and logarithmic functions is preferred in order to be compatible with several types of image signal processing systems (column 1, lines 33-37). Therefore, it would have been obvious to one of ordinary skill in the art to modify the

primary device to include the use of a linear and a logarithmic function to represent the relation between the image data and the data to be recorded as suggested by Kim.

24. In regard to **claim 11**, note McCarthy discloses that the recording device records the coefficients as attached information for the image data in the same image file as the image data (column 7, line 60- column 8, line 9).

25. In regard to **claim 34**, note McCarthy discloses the that the recording device records information that represents a relationship between the image data and digital values of the converted image data to be recorded the predetermined function and records at least a first coefficient of the function (column 7, lines 30-36). Therefore, it can be seen that the primary reference of McCarthy in view of Tsai fails to explicitly disclose that the predetermined function is a linear function. Kim discloses the use of a linear function for correction (column 1, lines 53-56; and figure 1: 14; using the function of Kim, the gamma correction coefficient that is stored in McCarthy is considered to be the equivalent of the first-order coefficient used in the correction function of Kim). Kim teaches that the use of a linear function is preferred in order to be compatible with several types of image signal processing systems (column 1, lines 33-37). Therefore, it would have been obvious to one of ordinary skill in the art to modify the primary device to include the use of a linear function to represent the relation between the image data and the data to be recorded as suggested by Kim.

26. In regard to **claim 5**, note McCarthy discloses that the recording device records the coefficient as attached information for the converted image data in the same image file as the converted image data (column 7, line 60- column 8, line 9).

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27. In regard to **claim 35**, note McCarthy discloses the that the recording device records information that represents a relationship between the image data and digital values of the converted image data to be recorded the predetermined function and records at least a first coefficient of the function (column 7, lines 30-36). Therefore, it can be seen that the primary reference of McCarthy in view of Tsai fails to disclose the use of a recording device using a logarithmic function to represent the relation between the image data and a digital value to be recorded. Kim discloses the use of a logarithmic function for correction (column 1, lines 53-56; and figure 1: 16; using the function of Kim, the gamma correction coefficient that is stored in McCarthy is considered to be the equivalent of the first-order coefficient used in the correction function of Kim). Kim teaches that the use of a logarithmic function is preferred in order to be compatible with several types of image signal processing systems (column 1, lines 33-37). Therefore, it would have been obvious to one of ordinary skill in the art to modify the primary to include the use of a logarithmic function to represent the relation between the image data and the data to be recorded as suggested by Kim.

28. In regard to **claim 8**, note McCarthy discloses that the recording device records the coefficient as attached information for the image data in the same image file as the image data (column 7, line 60- column 8, line 9).

29. Claims 6, 9, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over McCarthy et al. (US Patent # 6,335,983) in view of Tsai (US Patent # 5,309,243),

further in view of Kim (US Patent # 5,710,594), and further in view of Yamagami (US Patent # 6,522,830).

30. In regard to **claim 6**, note the primary reference of McCarthy in view of Tsai and Kim discloses an imaging device which images a subject so as to acquire image data with an imaging luminance range wider than a reproducing luminance range as claimed in claim 5 above. Therefore, it can be seen that the primary reference fails to disclose the use of a recording device that records the image data acquired by the imaging device into a directory or folder corresponding to the conversion mode. Yamagami discloses the use of a recording device that records the image data acquired by the imaging device into a directory or folder corresponding to the mode (column 11, lines 50-55). Yamagami teaches that the use of a recording device that records the image data acquired by the imaging device into a directory or folder corresponding to the mode is preferred in order to distinguish the types of image without changing the filenames (column 11, lines 50-55). Therefore, it would have been obvious to one of ordinary skill in the art to modify the primary device to include the use of a recording device that records the image data acquired by the imaging device into a directory or folder corresponding to the conversion mode as suggested by Yamagami.

31. In regard to **claim 9**, note the primary reference of McCarthy in view of Tsai and Kim discloses an imaging device which images a subject so as to acquire image data with an imaging luminance range wider than a reproducing luminance range as claimed in claim 8 above. Therefore, it can be seen that the primary reference fails to disclose the use of a recording device that records the image data acquired by the imaging

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device into a directory or folder corresponding to the conversion mode. Yamagami discloses the use of a recording device that records the image data acquired by the imaging device into a directory or folder corresponding to the mode (column 11, lines 50-55). Yamagami teaches that the use of a recording device that records the image data acquired by the imaging device into a directory or folder corresponding to the mode is preferred in order to distinguish the types of image without changing the filenames (column 11, lines 50-55). Therefore, it would have been obvious to one of ordinary skill in the art to modify the primary device to include the use of a recording device that records the image data acquired by the imaging device into a directory or folder corresponding to the conversion mode as suggested by Yamagami.

32. In regard to **claim 12**, note the primary reference of McCarthy in view of Tsai and Kim discloses an imaging device which images a subject so as to acquire image data with an imaging luminance range wider than a reproducing luminance range as claimed in claim 11 above. Therefore, it can be seen that the primary reference fails to disclose the use of a recording device that records the image data acquired by the imaging device into a directory or folder corresponding to the conversion mode. Yamagami discloses the use of a recording device that records the image data acquired by the imaging device into a directory or folder corresponding to the mode (column 11, lines 50-55). Yamagami teaches that the use of a recording device that records the image data acquired by the imaging device into a directory or folder corresponding to the mode is preferred in order to distinguish the types of image without changing the filenames (column 11, lines 50-55). Therefore, it would have been obvious to one of ordinary skill

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in the art to modify the primary device to include the use of a recording device that records the image data acquired by the imaging device into a directory or folder corresponding to the conversion mode as suggested by Yamagami.

33. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over McCarthy et al. (US Patent # 6,335,983) in view of Tsai (US Patent # 5,309,243), and further in view of Bayer (US Patent # 3,971,065).

34. In regard to **claim 13**, note McCarthy discloses the use of a digital camera that captures the image and converts the output voltage values into digital values and records the digital values (column 4, lines 38-49). Therefore, it can be seen that the primary reference of McCarthy in view of Tsai fails to disclose that the image is picked up using a CCD having a filter arrangement of R, G, B and G. Bayer discloses the use of a CCD having a filter arrangement of R, G, B and G (column 4, lines 50-67, column 5, lines 54-60, and figure 6). Bayer teaches that the use of a CCD having a filter arrangement of R, G, B and G is preferred in order to capture an image with luminance detail to which the human eye is most responsive (column 5, lines 60-67). Therefore, it would have been obvious to one of ordinary skill in the art to modify the primary device to include the use of a filter arrangement of R, G, B and G as suggested by Bayer.

35. Claims 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over McCarthy et al. (US Patent # 6,335,983) in view of Tsai (US Patent # 5,309,243), and further in view of Horiuchi (US Patent # 6,801,248).

36. In regard to **claim 15**, note the primary reference of McCarthy in view of Tsai discloses an imaging device which images a subject so as to acquire image data with an imaging luminance range wider than a reproducing luminance range as claimed in claim 1 above. Therefore, it can be seen that the primary reference fails to disclose a mode switching device which switches between a normal imaging mode and a wide luminance range imaging mode. Horiuchi discloses the use of a mode selecting device that switches between different modes (column 6, lines 4-17). It is well known that the use of a mode selecting device is preferred in order to allow the user to select a desired mode. Therefore, it would have been obvious to one of ordinary skill in the art to modify the primary device to include the use of a mode selector as suggested by Horiuchi.

37. In regard to **claim 16**, note Horiuchi discloses that the subject is imaged with a normal exposure value obtained from normal photometry in the normal imaging mode (column 5, lines 49-51 and column 6, lines 11-20) and the subject is imaged with an exposure value lower than the normal exposure value in the wide luminance range imaging mode, the exposure value being calculated based on the normal exposure value obtained by the normal photometry (column 7, lines 11-31).

38. Claims 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over McCarthy et al. (US Patent # 6,335,983) in view of Tsai (US Patent # 5,309,243), and further in view of Nakagawa et al. (US Patent # 6,738,092).

39. In regard to **claim 17**, note the primary reference of McCarthy in view of Tsai discloses an imaging device which images a subject so as to acquire image data with

an imaging luminance range wider than a reproducing luminance range as claimed in claim 1 above. Therefore, it can be seen that the primary reference fails to disclose that the recording device records the image data with substantially the same luminance range as the reproducing luminance range and records the image data with the acquiring imaging luminance range that is wider than the reproducing luminance range at one time. Nakagawa discloses the use of a recording device that stores two images of different quality at the same time (figure 5: original and either of the thumbnail or the jpeg image; this is the functional equivalent of the recording images of different luminance values). It is well known in the art to store a processed image along with an original image in order to provide a user with an unprocessed image for future image processing. Therefore, it would have been obvious to one of ordinary skill in the art to modify the primary device to include the use of a recording device that records high quality images as well as low quality images as suggested by Nakagawa.

40. In regard to **claim 18**, note McCarthy discloses the use of an imaging device that images the subject with an exposure value of a case in which the subject is imaged with the imaging luminance range that is wider than the reproducing luminance range (column 2, lines 28-33 and column 4, lines 9-35) and the recording device converts the image data acquired by the imaging device with the exposure value so that the luminance range of the image data is substantially the same as the reproducing luminance range (column 5, lines 22-30).

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41. Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over McCarthy et al. (US Patent # 6,335,983) in view of Tsai (US Patent # 5,309,243), further in view of Horiuchi (US Patent # 6,825,884), and further in view of Yamagami (US Patent # 6,522,830).

42. In regard to **claim 36**, note the primary reference of McCarthy in view of Tsai and Horiuchi discloses an imaging device which images a subject so as to acquire image data with an imaging luminance range wider than a reproducing luminance range as claimed in claim 15 above. Therefore, it can be seen that the primary reference fails to disclose the use of a recording device that records the image data acquired by the imaging device into a directory or folder corresponding to the imaging mode.

Yamagami discloses the use of a recording device that records the image data acquired by the imaging device into a directory or folder corresponding to the imaging mode (column 11, lines 50-55). Yamagami teaches that the use of a recording device that records the image data acquired by the imaging device into a directory or folder corresponding to the imaging mode is preferred in order to distinguish the types of image without changing the filenames (column 11, lines 50-55). Therefore, it would have been obvious to one of ordinary skill in the art to modify the primary device to include the use of a recording device that records the image data acquired by the imaging device into a directory or folder corresponding to the imaging mode as suggested by Yamagami.

43. Claims 37-38 and 45-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Horiuchi (US Patent # 6,801,248) in view of Tsai (US Patent # 5,309,243), and further in view of Yamagami (US Patent # 6,522,830).

44. In regard to **claim 37**, note Horiuchi discloses an electronic camera for recording image data obtained by imaging a subject, comprising an imaging device having a normal imaging mode in which the subject is imaged with a normal luminance range and having a wide luminance range imaging mode in which the subject is imaged with a wide imaging luminance range wider than the normal luminance (column 6, line 11-column 7, line 37), the imaging device for imaging the subject according to at least one of the normal imaging mode and the wide luminance imaging mode (column 6, lines 11-17), and a recording device for recording the image data acquired by the imaging device (column 5, lines 60-67).

Therefore, it can be seen that Horiuchi fails to disclose that the normal luminance range is the range required in reproducing or printing or both, the subject is imaged with an exposure value that is lower than a normal exposure value for a desired reproducing, and that the images are stored in a directory or a folder corresponding to one of the normal imaging mode and the wide luminance imaging mode.

Official Notice is taken that the concepts and advantages of using a normal luminance range of a camera within the range required for display or printing are well known and expected in the art. Therefore, it would have been obvious to one of ordinary skill in the art to modify the Horiuchi device so that the normal luminance range of the camera is within the range required for display or printing in order to reduce

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processing time by providing an image that required no processing/editing prior to output.

Tsai discloses the use of an imaging device that images a subject with lower than normal exposure values (column 2, lines 30-36). Tsai teaches that the adjustment of the image exposure values is preferred in order to compensate the image for better quality. Therefore, it would have been obvious to one of ordinary skill in the art to modify the primary device to image the subject with a lower than normal exposure value as suggested by Tsai.

Yamagami discloses the use of a recording device that records the image data acquired by the imaging device into a directory or folder corresponding to the imaging mode (column 11, lines 50-55). Yamagami teaches that the use of a recording device that records the image data acquired by the imaging device into a directory or folder corresponding to the imaging mode is preferred in order to distinguish the types of image without changing the filenames (column 11, lines 50-55). Therefore, it would have been obvious to one of ordinary skill in the art to modify the Horiuchi device to include the use of a recording device that records the image data acquired by the imaging device into a directory or folder corresponding to the imaging mode as suggested by Yamagami.

45. In regard to **claim 38**, note Horiuchi discloses the use of a mode switching device that switches between two modes (column 6, lines 6-15).

46. In regard to **claim 45**, note Horiuchi discloses that when the electronic camera is in the wide luminance range imaging mode, the imaging device images the subject in

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both the normal luminance range and the wide imaging luminance range (column 6, line 11- column 7, line 37; by capturing the wide luminance range image, the normal luminance range is encompassed within the wide luminance).

47. In regard to **claim 46**, note Horiuchi discloses that when the electronic camera is in the wide luminance range imaging mode, the recording device records the image data of the imaged subject with the normal luminance range and records the image data of the imaged subject with the wide imaging luminance range (column 5, lines 60-67; by recording the wide luminance range image, the normal luminance range is encompassed within the wide luminance).

48. Claims 43-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Horiuchi (US Patent # 6,801,248) in view of Tsai (US Patent # 5,309,243), further in view of Yamagami (US Patent # 6,522,830), and further in view of McCarthy et al. (US Patent # 6,335,983).

49. In regard to **claim 43**, note the primary reference of Horiuchi in view of Tsai and Yamagami discloses the use of an electronic camera for recording image data obtained by imaging a subject, as recited in claim 37 above. Therefore, it can be seen that the primary reference fails to disclose that recording device records information indicating whether the subject is imaged in the normal luminance mode or imaged in the wide luminance range imaging mode, and wherein the information is recorded separately from the image data. McCarthy discloses the use of an electronic camera having a recording device that records information indicating a luminance range of the image,

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and wherein the information is recorded separately from the image data (column 7, lines 57-63). McCarthy teaches that the use of a recording device that records information indicating a luminance range of the image and having the information recorded separately from the image data is preferred in order to reconstruct the original image from a compressed image (column 7, line 64-column 8, line 65). Therefore, it would have been obvious to one of ordinary skill in the art to modify the primary device to include the use a recording device that records information indicating a luminance range of the image and having the information recorded separately from the image data in order to reconstruct the original image from a compressed image as suggested by McCarthy.

50. In regard to **claim 44**, note McCarthy discloses that the recording device records the information indicating whether the subject is imaged in the normal luminance mode or imaged in the wide luminance range imaging mode in the same file as the image data (column 7, lines 57-63).

Allowable Subject Matter

Claims 50-58 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

As for **claim 50**, the prior art does not teach or fairly suggest the use of an electronic camera, comprising an imaging device configured to image a subject in a luminance mode to generate raw image data, wherein the luminance mode is one of at least a first luminance mode and a second luminance mode, wherein in the first

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luminance mode, the imaging device images the subject in a first luminance range, and wherein in the second luminance mode, the imaging device images the subject in a second luminance range different than the first luminance range, and wherein in at least one of the first luminance mode and the second luminance mode, the imaging device images the subject with an exposure value that is lower than a normal exposure value for a desired reproducing, a processing device configured to generate converted image data by processing the raw image data based on the luminance mode of the raw image data, and *a recording device configured to record the converted image data in a storage area and configured to record the luminance mode of the raw image data in the storage area separately from the converted image data.*

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US005189511A: note the use of different image correction functions for corresponding different image parameters.

US007161629B2: note the use of a camera calculating the optimum exposure.

US005674665: note the use of a camera that captures an image that is under-exposed.

US005913014A: note the use of an image transform for image reproduction.

US006097471A: note the use of an image transform for image reproduction.

US005631705: note the use of a camera calculating the optimum exposure.

US005528293A: note the use of tags stored in the image header that are used to process the image.

US006273535B1: note the use of stored parameters that are used to select a method of image processing.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chriss S. Yoder, III whose telephone number is (571) 272-7323. The examiner can normally be reached on M-F: 8 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lin Ye can be reached on (571) 272-7372. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CSY
November 2, 2007



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